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Research Article

Formulation and Evaluation of Herbo-Mineral Facial Scrub

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ABSTRACT

The main objective of present study was to prepare a herbo-mineral facial scrub. Majorly facial skin comes in direct contact of dirt, pollution, dust particles and having large number of dead cells. In order to remove the dead cells and make the skin healthy, cleaned and nourished, some facial preparations required. The prepared scrub contains various natural ingredients which are safer for use and having fewer side effects and also they possess antiseptic, anti-infective, antioxidant, anti-aging and humectant properties. The scrub was prepared by using simple mixing method using various ingredients such as poppy seeds, neem extract, tulsi extract, aloe vera gel, almond oil, mixed in carbopol 934, rest of ingredients such as glycerin, triethanolamine, preservatives and perfuming agent were also added to this preparation with homogeneous mixing. The formulated scrub was evaluated for various parameters such as physical appearance, color, texture, odor, pH, viscosity, irritability, washability, homogeneity, extrudability, spreadability and found fruitful results for all the parameter tested. Thus the prepared formulation can be used effectively as it shows good scrubbing properties and it can be used to make a healthy, clean and glowing skin.

Keywords: Facial scrub, antiseptic, anti-aging, herbal, poppy seeds etc.**Article Info:** Received 17 March 2020; Review Completed 29 April 2020; Accepted 06 May 2020; Available online 15 May 2020

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INTRODUCTION:

Skin is the one of the largest organ of body. It serves as a major protective organ for other body parts. Skin functions as a protective wrapper, keeping everything beneath it and keep safe from daily threats such as the harsh effects of sun, wind and pollution germ filled grime (1, 2). The skin supports its own ecosystem of microorganism, including yeast and bacteria, which cannot be removed by any amount of cleaning. Skin is also a sensory organ, which indicates the health of individual. It consists of material such as amino acid, lipid and carbohydrate etc. so that a balanced nutrition is required for skin to keep it glossy, clean and clear and healthy (3, 4). Cosmetics are defined as the products used for the purposes of cleansing, beautifying, promoting attractiveness or alternating the appearance (5). From the ancient time, different herbs are used for cleaning, beautifying and to manage them. Face skin is the major part of the body, which indicates the health of an individual (6). Skin care is very important to make it healthy and fresh; there are so many market preparations for skin care. Skin care is at the interface of cosmetics and dermatology but skin care differ from dermatology, it does not required any medical professional's every time (7).

Herbal exfoliates alleviate age-related changes and neutralize environmental attack by removing skin cells on

the surface and stimulating cell growth in the sub-epidermal layer (8). As grow older, rate of cell turnover slows down dramatically. Majorly dead cell found on facial skin surface hang around much longer, a fact that tends to emphasize those fine lines and can make complexion dull and lifeless (9). To remain healthy and of good appearance, the skin surface requires frequent cleansing to remove grime, sebum and other secretions, dead cells, crusts and applied make-ups (10). By removing these dead skin cells exfoliating skin- whether physically with scrub using herbal products containing vitamins, antioxidants, antiseptics and anti-aging properties which help to deep cleanse the skin and make it glow and attractive.

MATERIAL AND METHODS:

Poppy seeds were purchased from local shop and then slightly crushed in pestle mortar. Extracts of neem and tulsi leaves were prepared using Soxhlet apparatus, neem and tulsi leaves kept with water for 72 hrs. separately. Extraction were dried and stored in desiccator for further use. Crushed poppy seeds dissolved in alcohol to avoid get swallow in water, fresh aloe vera leaves collected for gel preparation, from herbal garden of college. Other ingredients were almond oil, triethanolamine, preservatives, perfuming agent (Rose essence), carbopol 934 and glycerin.

Table 1: Formula of Scrub

Ingredients	Uses	Quantity
Poppy seed	Scrubbing agent, antioxidant	5-10%
Camphor	Humectant, anti-aging agent	0.25%
Almond(Oil)	Stimulate the production of new skin cells and smooth fine lines. Emollients	5%
Glycerin	Emollients	2.5-5%
Kaolin	Adsorbent	2.5%
Neem (Extract)	Antiseptic, Skin conditioner	1%
Tulsi (Extract)	Anti-infective	1%
Aloe vera	Antioxidant	2.5%
Carbopol 934	Thickening agent, Gelling agent	1%
Methyl paraben	Preservative	0.05%
Propyl paraben	Preservative	0.025%
Triethanolamine	Neutralizer	Q.S.
Alcohol	Moisturizing	Q.S.
Rose essence	Perfuming agent	Q.S.
Demineralized water	Vehicle	To make up to 50 g

Method of Preparation:

❖ Collection of Plant Material

Identified fresh leaves of plants were collected from herbal garden of Acropolis Institute of Pharmaceutical Education & Research College, Indore.

Preparation of Extract:

Preparation of Neem Extract: Neem extract was prepared by using Soxhlet apparatus. neem leaves kept with water for 72 hrs. Extraction was dried and stored in desiccator for further use.

Preparation of Tulsi Extract: Tulsi extract was prepared by using Soxhlet apparatus. Tulsi leaves kept with water for 72 hrs. Extraction was dried and stored in desiccator for further use.

Preparation of Aloe-vera Gel:

Fresh aloe vera leaves collected and remove the gel manually. Gel was grinded into mixer to get a homogeneous form.

Preparation of Carbopol Base:

Required quantity of carbapol 934 taken in a separate beaker. Add rest of ingredient one by one in to it with continuous and homogeneous stirring.

Step 1- Mixed camphor, almond oil, glycerin and propyl paraben together in a separator beaker.

Step 2- Mixed crushed Poppy seed (pre alcohol mixed), kaolin, neem extract, tulsi extract, aloe vera gel and methyl paraben in another container.

Step 3- Add carbopol in little quantity of alcohol, add aloe vera gel in the mixture and triturate well in pestle mortar.

Add the contents of steps 1, 2 into 3 with gentle continuous stirring in a pestle mortar. Add demineralized water gradually till a semi solid consistency preparation was not formed.

Evaluation parameter of Facial Scrub-

Formulation was tested for physical appearance, color, texture, odor, pH, viscosity, irritability, washability, homogeneity, extrudability and spreadability (11, 12, 13, 14).

1. Organoleptic properties-

A) **Colour-** The color of formulation was checked manually and observed as creamish white.

B) **Odour-** The smell of formulation was checked by applying preparation on hand and feels the fragrance of perfume.

C) **Consistency-** The consistency of the formulation and particles were used to check the texture and homogeneity of preparation on the skin such as stiffness, grittiness, greasiness effect. Preparation found semi-solid in nature.

D) **Homogeneity and texture-** It was tested by pressing a small quantity of the formulated scrub between the thumb and index finger.

2. Washability- This test was performed directly on skin, preparation applied on skin and wash with normal water, after washing clean and clear skin observed.

3. pH- pH of 1% aqueous solution of formulation was measured by using a calibrated digital pH meter and result found 7.5

4. Viscosity- For Viscosity measurement, Brookfield viscometer "Helepath Spindle A-91" used, and result observed as 6960-7100cps at 10 rpm.

5. Extrudability- It is usual empirical test to measure the force required to extrude the material from tube. More quantity extruded, better the extrudability. The formulation under study was filled in a clean, aluminum collapsible tube with nozzle tube of 5mm opening and applies pressure on tube by the help of finger. Tube extrudability was then determined by measuring amount of formulation extruded through the tip when the pressure was applied on tube.

6. Spreadability- Spreadability of the formulations was determined by measuring the spreading diameter by keeping 1g of sample between two horizontal glass plates (10 cm × 20 cm). The standard weight 20 gm applied on the upper glass plate. The spreading quality checked by visual inspection.

7. Skin irritation- Small quantity of the preparation was applied on the dorsal part of hand and kept for few minutes and found to be non-irritant, No redness and edema or any other adverse effect.

RESULTS AND DISCUSSION:

Table 2: Evaluation of Scrub

S. N.	Parameters	Observation
1	Colour	Creamish white
2	Odour	Characteristic as Rose
3	Consistency	Good
4	Homogeneity and texture	Good
5	Washability	Easily washable
6	pH	7.5
7	Viscosity	6960-7100 cps at 10 rpm
8	Extrudability	Easily extruded
9	Spreadability	Easily spread
10	Skin Irritation	Non Irritant

The formulated herbo-mineral scrub was evaluated at different parameters. All the organoleptic properties were checked visually such as colour, odour, consistency, homogeneity and texture. As a result, colour observed as creamish white, no bad smell occurred from formulation. The consistency of the formulation found suitable as required to apply on skin. Particles were used to check for the texture and homogeneity of preparation on skin found good and satisfactorily as the preparation show grittiness, greasiness properties on skin. Washability properties found good, as it is easily removed by washing with normal water. pH of the formulation checked and found 7.5 means suitable for skin. Extrudability test performed with the help of empty collapsible tube filled with scrub, checked for quantity

extruded from the nozzle of 5 mm and found satisfactory. Spreadability quality also tested with the help of glass plates and found that preparation having good consistency and easily spreadable. No irritation, redness, edema and any dermatological effects observed on skin. Viscosity checked and result found as 6960-7100 cps at 10 rpm.

CONCLUSION:

From the above results it is concluded that new formulation herbo-mineral scrub can be safe to use and the poppy seed used as a scrubbing/cleansing agent showing good effects and as mostly ingredients are natural ingredients so chances for side effects are less. It can be used for any type of skin i.e. normal, oily and dry. It gives best results and make the skin glowing and healthy.

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